mga research corporation

BABY TREND
64XX LATCH-LOC
PRODUCTION TESTING

MGA Reference No.: C08S3-003.4

Test Dates: April 22 - 23, 2008

Report Date: April 29, 2008

FINAL REPORT

PREPARED FOR:

Baby Trend
1567 South Campus Avenue
Ontario, CA 91761

PREPARED BY:

MGA Research Corporation
5000 Warren Road
Burlington, WI 53105

SIGNATURE APPROVAL PAGE

Procedure Number: NHTSA FMVSS 213 Sled Test Procedure
dated October 25, 2007

Total Pages: 33

Approved by: Robert M Schnorenberg
Robert Schnorenberg, Project Leader

Date: April 29, 2008

Jay Nutting, Sled Manager

Date: April 29, 2008

Test Engineers: David Esse
Alyssa Paul

Instrumentation/
Calibration: Tim Bratz
Jessica Gall
David Wilcox

Secretary: Pam Delaney

The results presented in this report relate only to the specified test items.

OVERALL TEST SUMMARY

The testing was performed to meet criteria from matrix received from Derek Conrad.

TEST DATA NO. 1

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08282F
Test Date:	4/22/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 K (Newborn)
Serial Number:	004
Temperature (Deg. F):	69
Relative Humidity (%):	49
Child Restraint System	
Model Number and Description:	64XX Latch-Loc
Installation Mode:	Rear-Facing with lap belt
Adjustment Mode:	Reclined, Pre-test angle 35°
Shoulder Belt Location:	Bottom
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.7
Actual Velocity (mph):	29.2

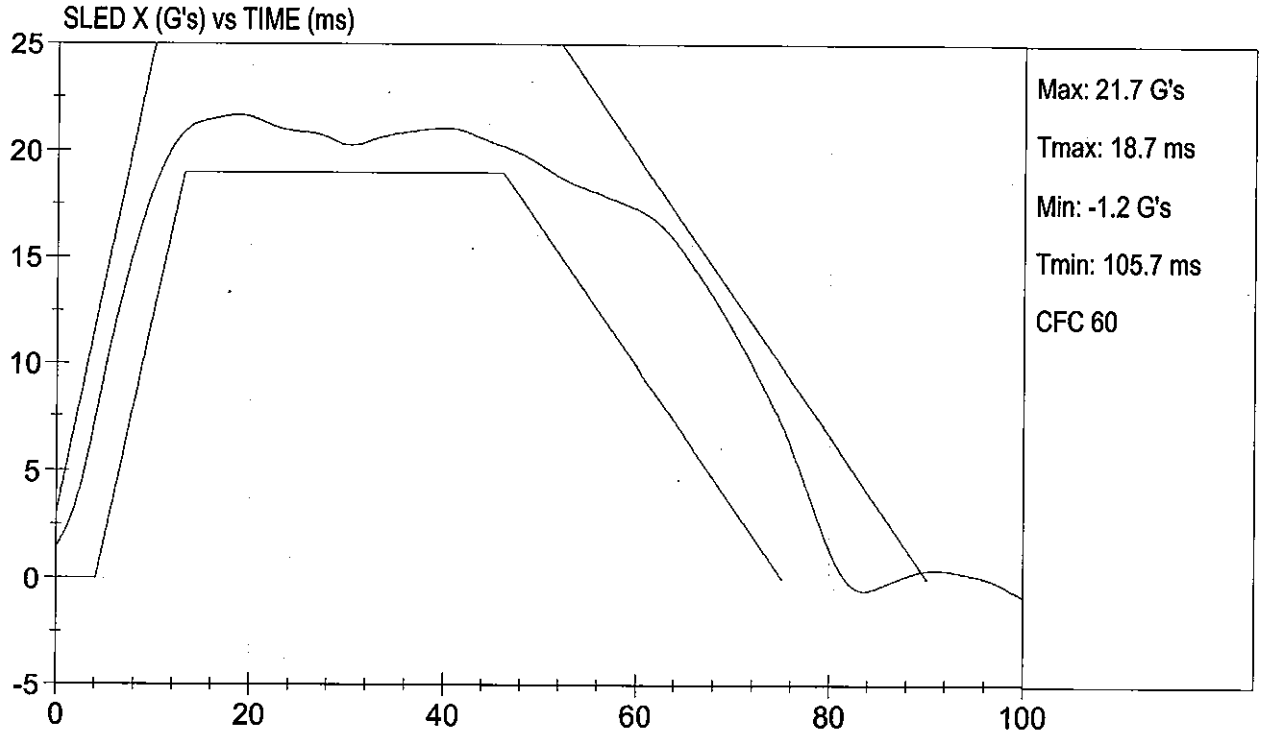
Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	12.0 lbs R 12.0 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	12.0 lbs R 12.0 lbs L

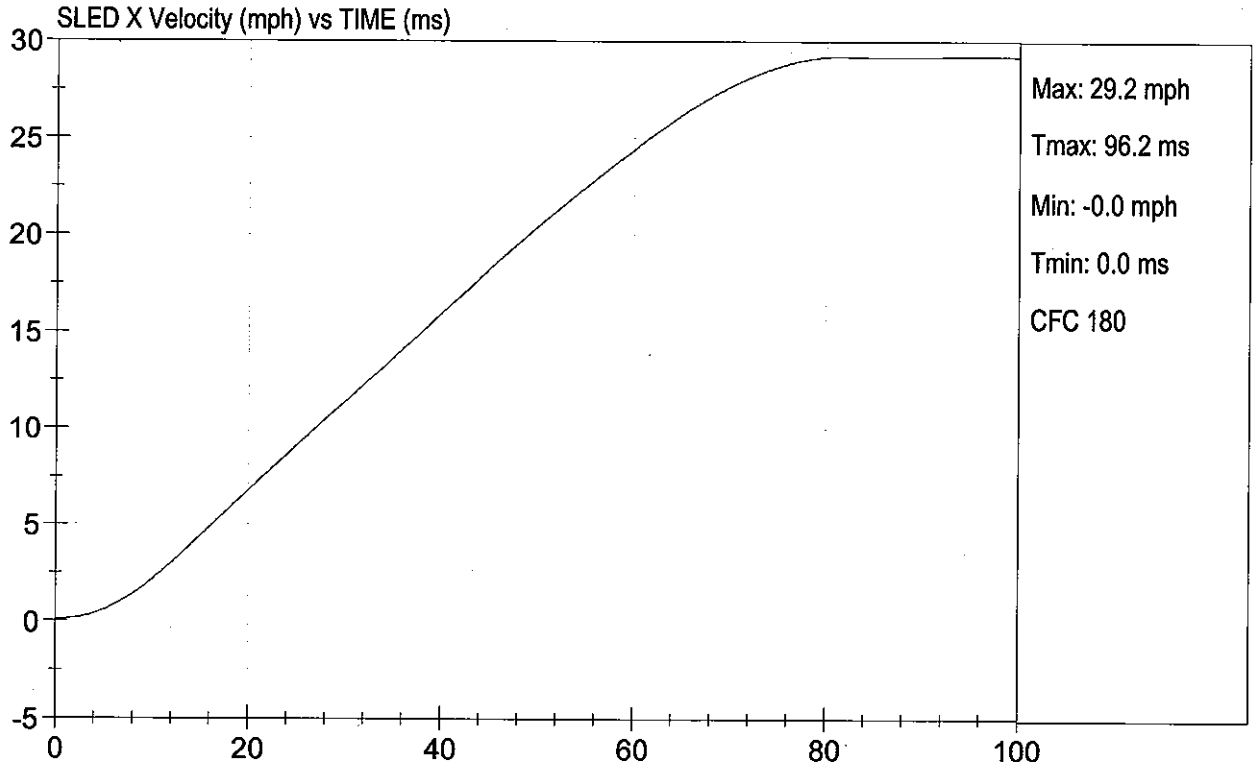
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	48°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

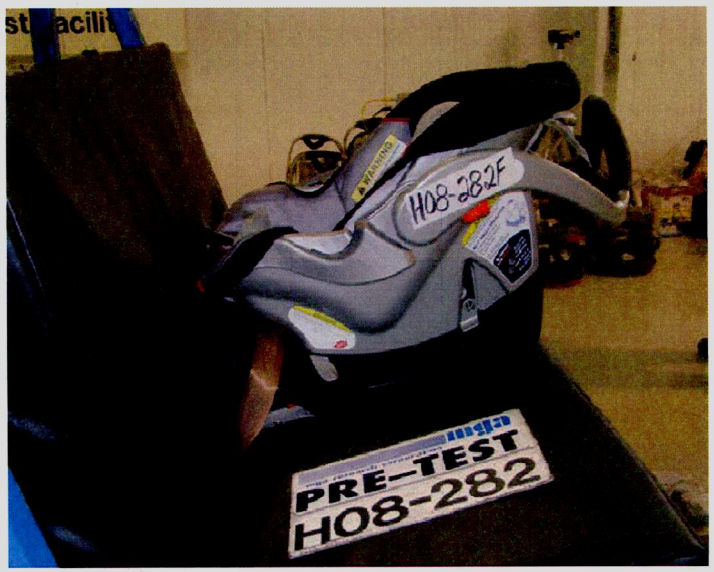
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

TEST DATE: 04/22/2008
TEST #: H08282

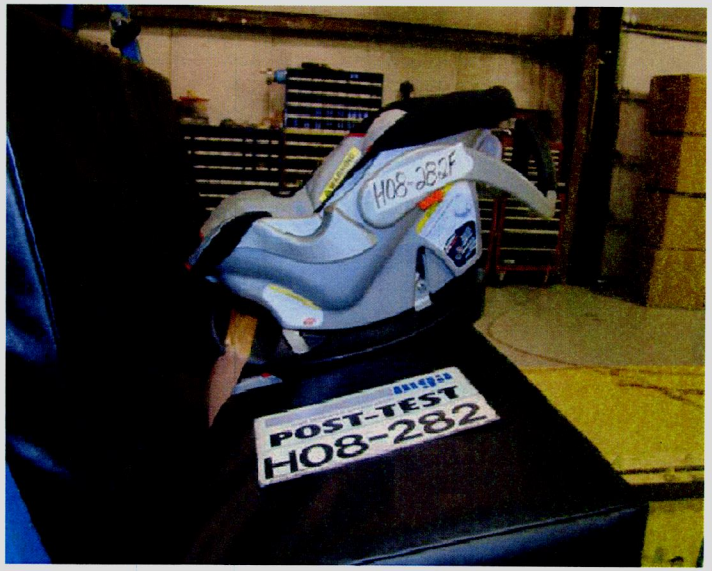




Sled Test: H08282F Pre-Test



Sled Test: H08282F Post-Test



TEST DATA NO. 2

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08282R
Test Date:	4/22/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 R (CRABI 12 mo)
Serial Number:	042
Temperature (Deg. F):	69
Relative Humidity (%):	49
Child Restraint System	
Model Number and Description:	64XX Latch-Loc (1)
Installation Mode:	Rear-Facing with lap belt
Adjustment Mode:	Reclined, Pre-test angle 40°
Shoulder Belt Location:	Top
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.7
Actual Velocity (mph):	29.2

Injury Criteria (FMVSS 213, S5.1.2)		
Test	Compliance Requirement	Test Result
Head Injury Criterion	≤ 1000	429
Chest Injury Criterion	Cumulative Duration Over 60 g ≤ 3 ms	3 msec clip = 42.3 Duration exceeded 60 g = 0.0

Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	12.5 lbs R 12.5 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	12.6 lbs R 12.6 lbs L

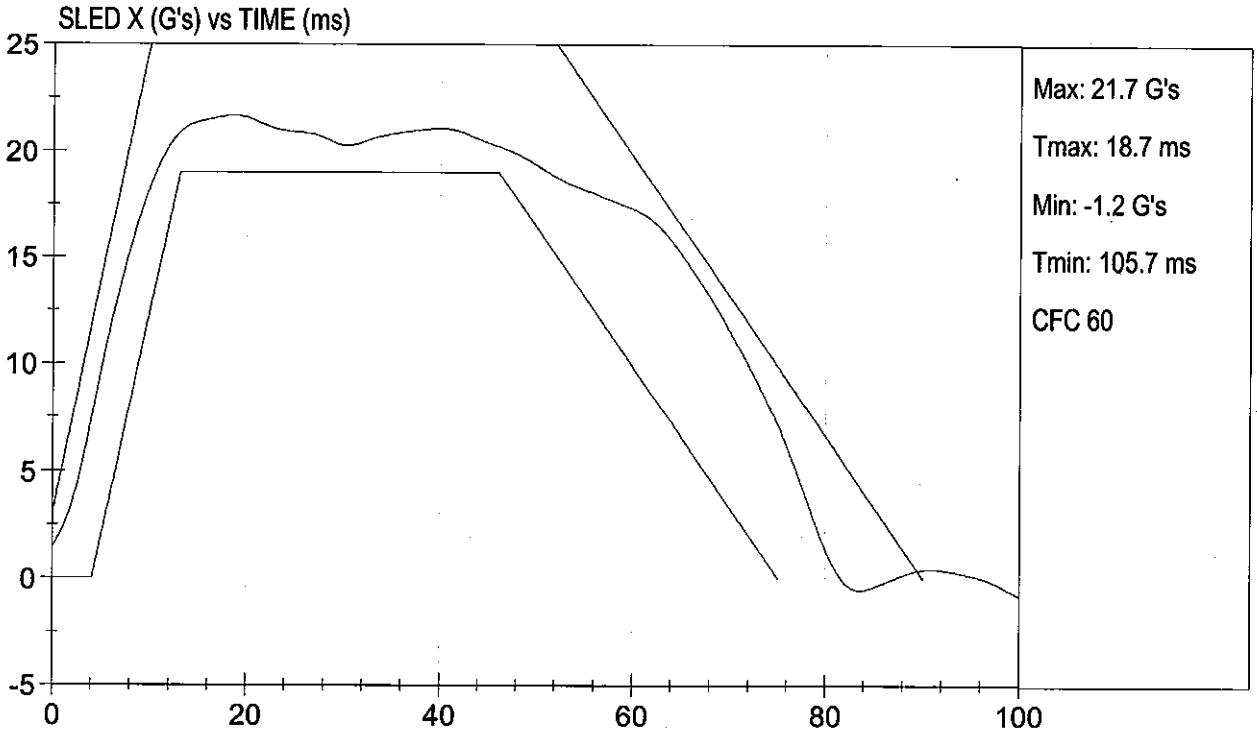
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

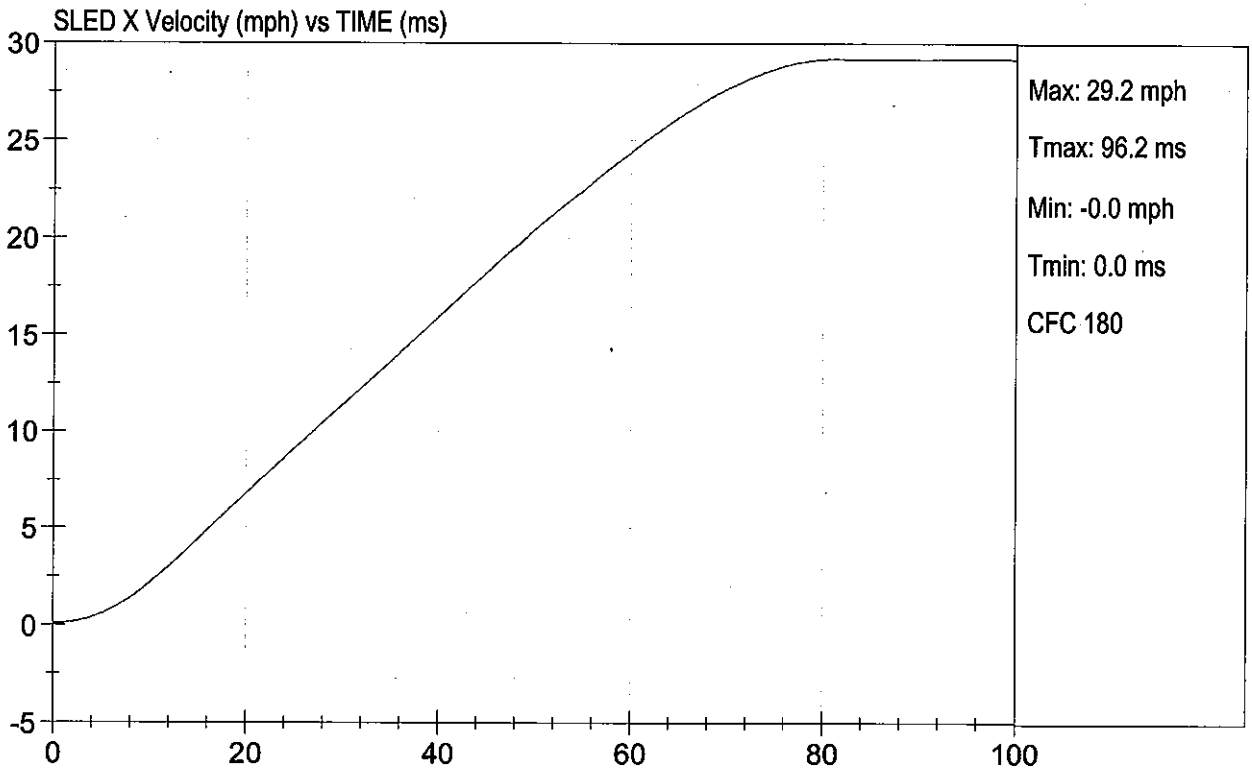
Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	56°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

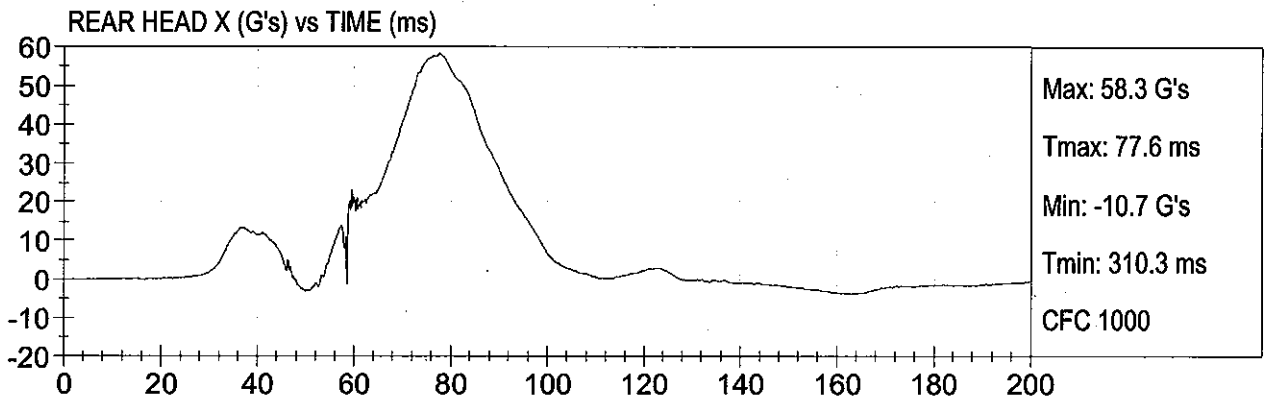
Remarks:
(1) Tested with new M7 buckle.

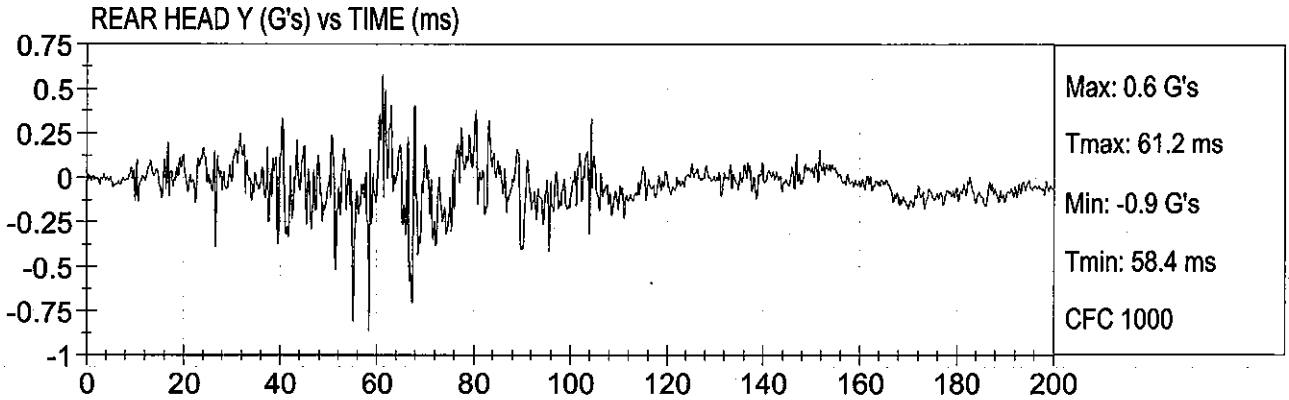
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

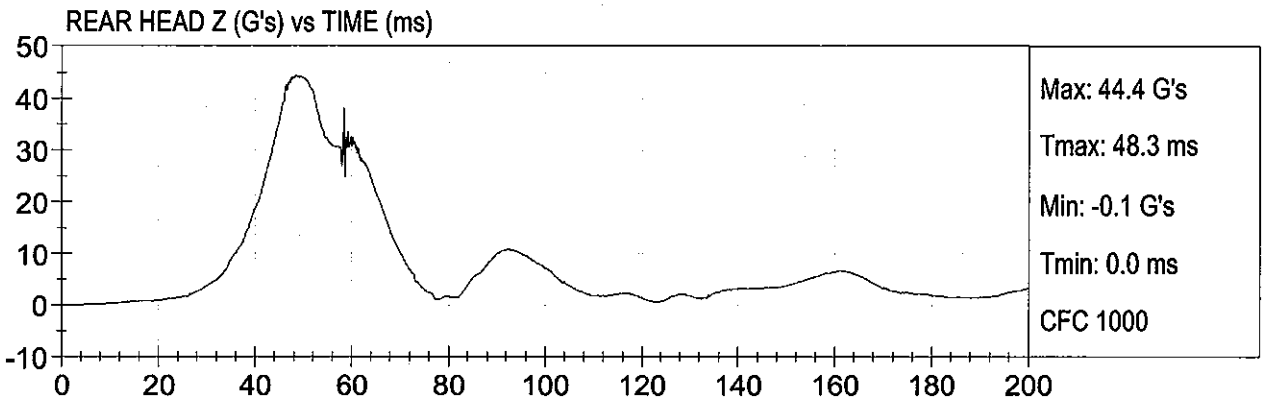
TEST DATE: 04/22/2008
TEST #: H08282

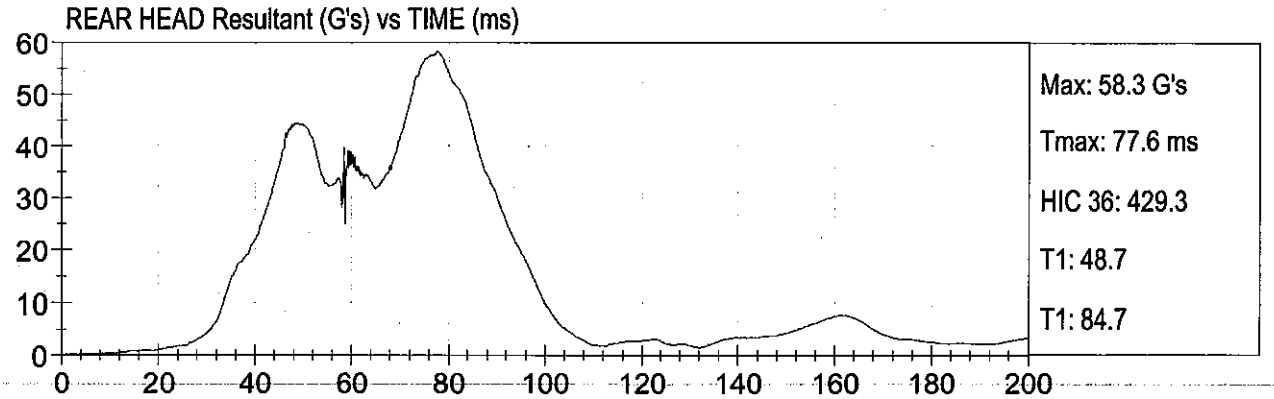




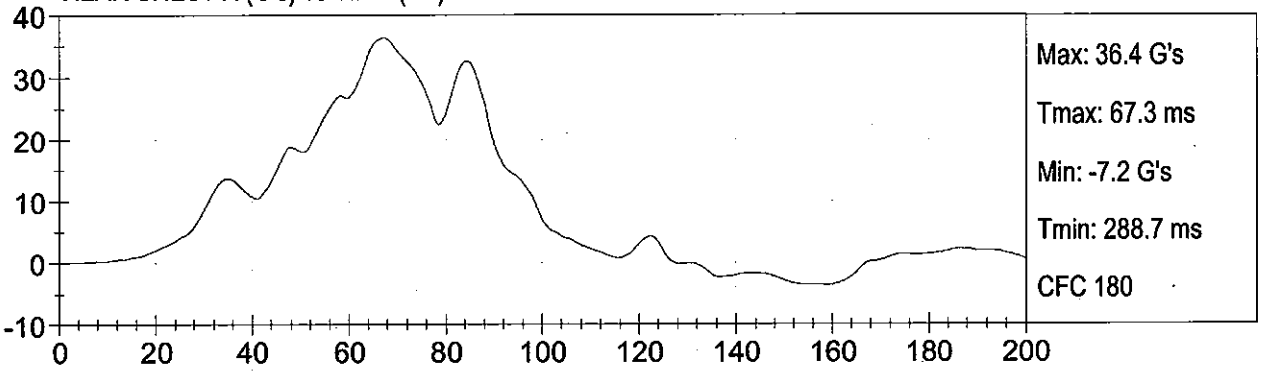

REAR HEAD X (G's) vs TIME (ms)
Max: 58.3 G's
Tmax: 77.6 ms
Min: -10.7 G's
Tmin: 310.3 ms
CFC 1000


REAR HEAD Y (G's) vs TIME (ms)
Max: 0.6 G's
Tmax: 61.2 ms
Min: -0.9 G's
Tmin: 58.4 ms
CFC 1000

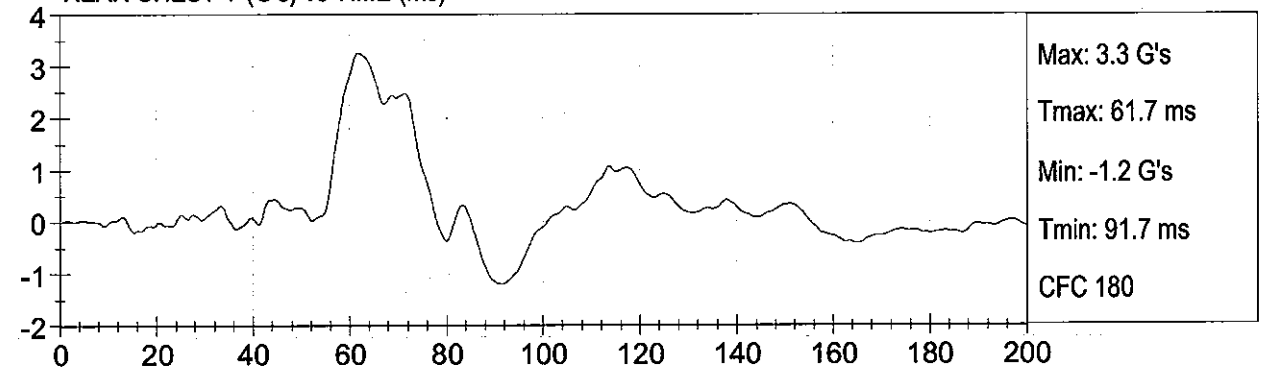

REAR HEAD Z (G's) vs TIME (ms)
Max: 44.4 G's
Tmax: 48.3 ms
Min: -0.1 G's
Tmin: 0.0 ms
CFC 1000


REAR HEAD Resultant (G's) vs TIME (ms)
Max: 58.3 G's
Tmax: 77.6 ms
HIC 36: 429.3
T1: 48.7
T1: 84.7

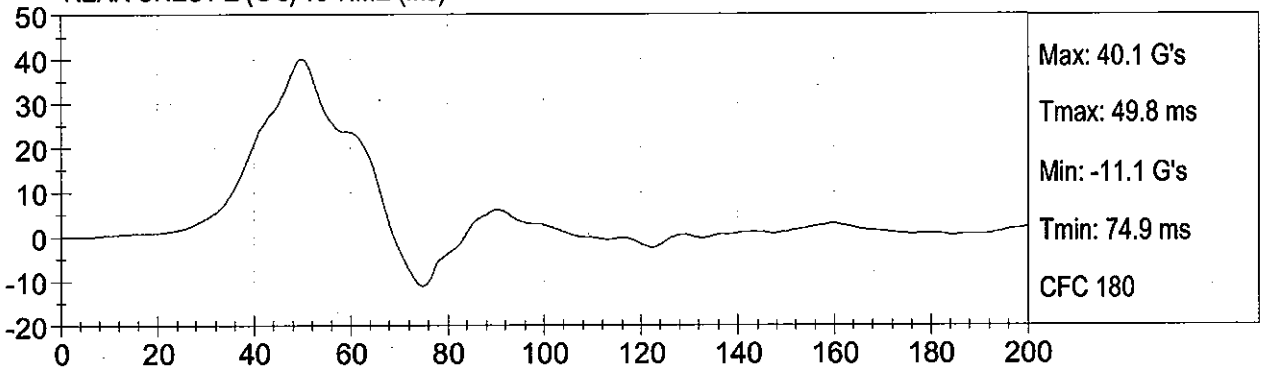
REAR CHEST X (G's) vs TIME (ms)



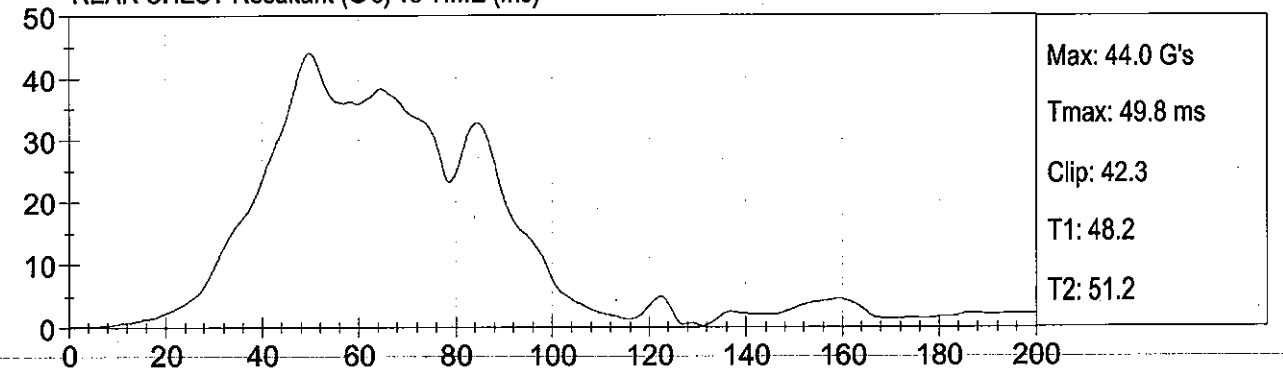
REAR CHEST Y (G's) vs TIME (ms)



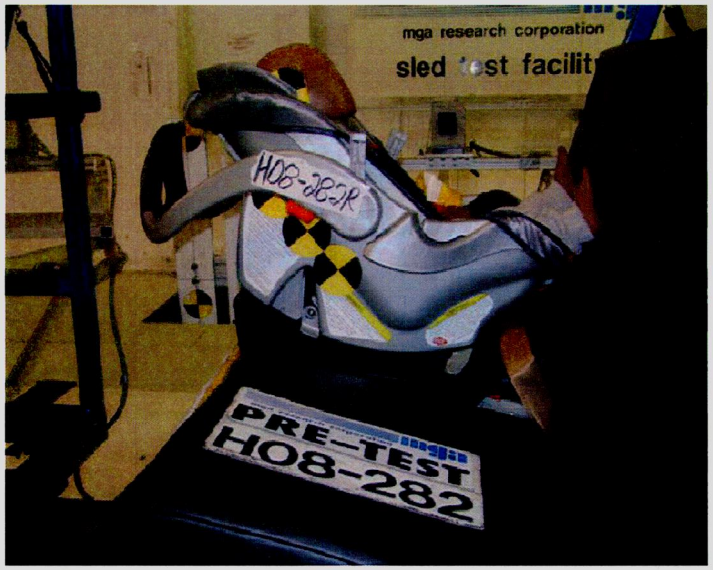
REAR CHEST Z (G's) vs TIME (ms)

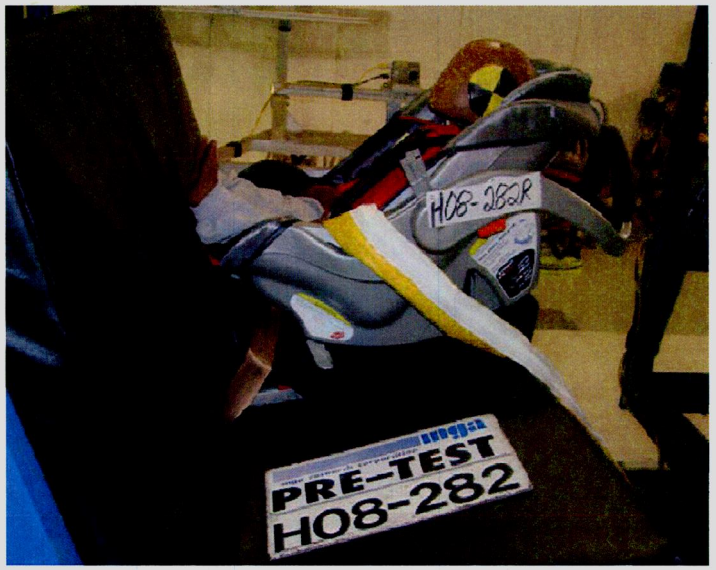


REAR CHEST Resultant (G's) vs TIME (ms)

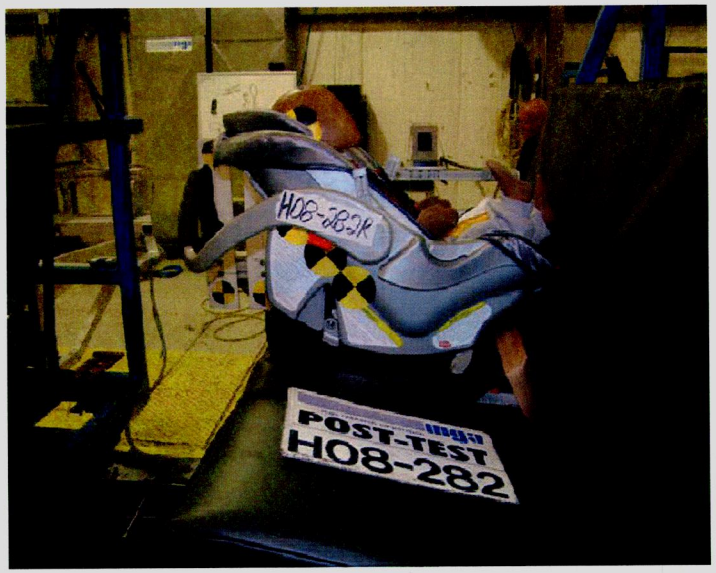


Sled Test: H08282R Pre-Test





Sled Test: H08282R Post-Test



TEST DATA NO. 3

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08283F
Test Date:	4/22/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 K (Newborn)
Serial Number:	004
Temperature (Deg. F):	70
Relative Humidity (%):	47
Child Restraint System	
Model Number and Description:	64XX Latch-Loc
Installation Mode:	Rear-Facing with lap belt, carrier only
Adjustment Mode:	Reclined, Pre-test angle 34°
Shoulder Belt Location:	Bottom
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.7
Actual Velocity (mph):	29.3

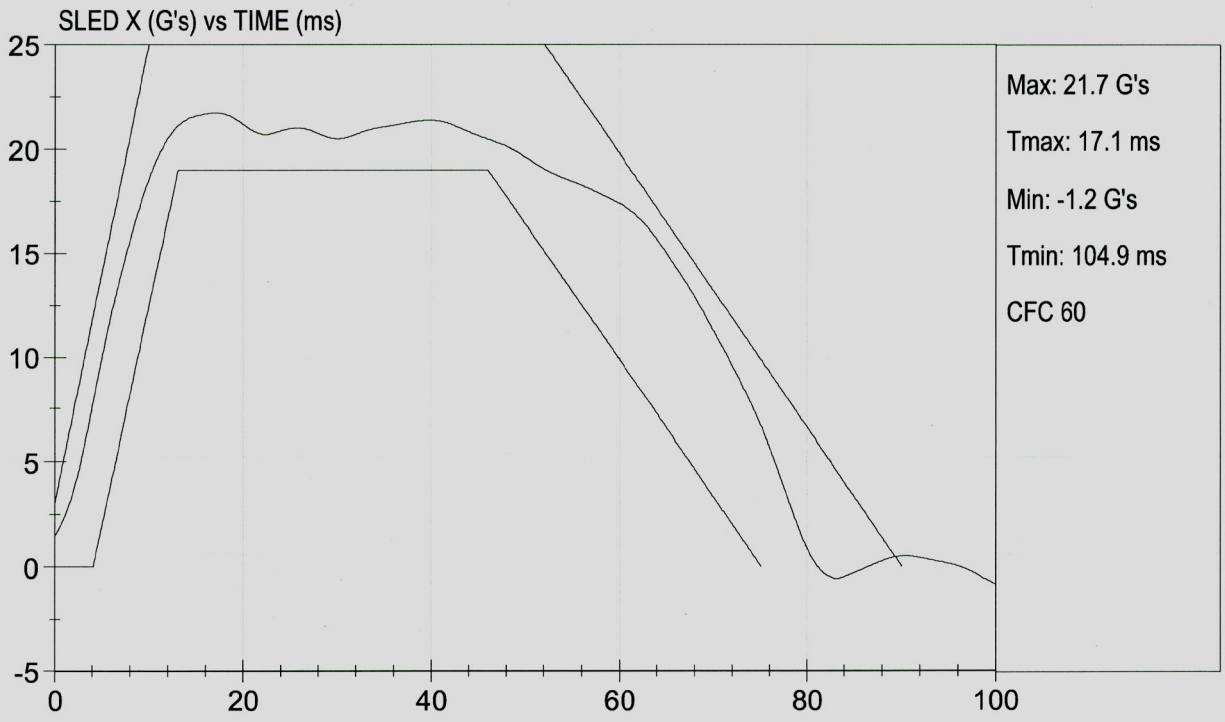
Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	12.1 lbs R 12.1 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	11.0 lbs R 11.0 lbs L

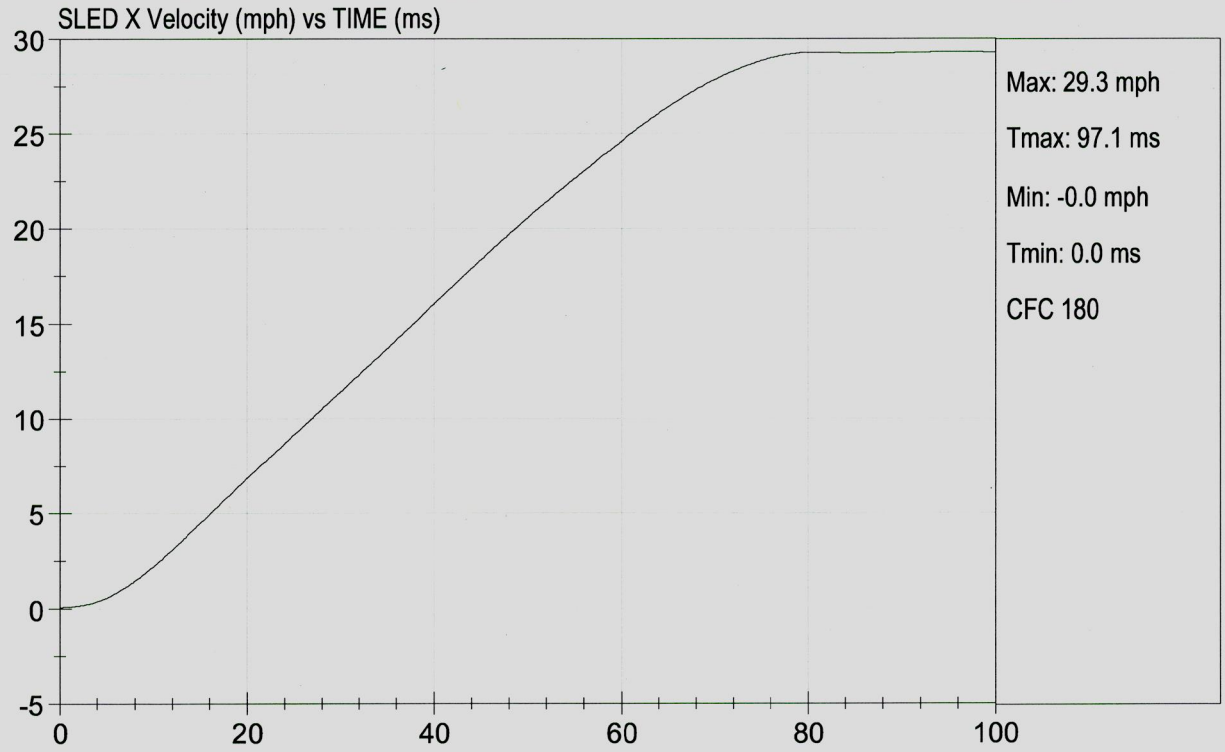
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	56°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

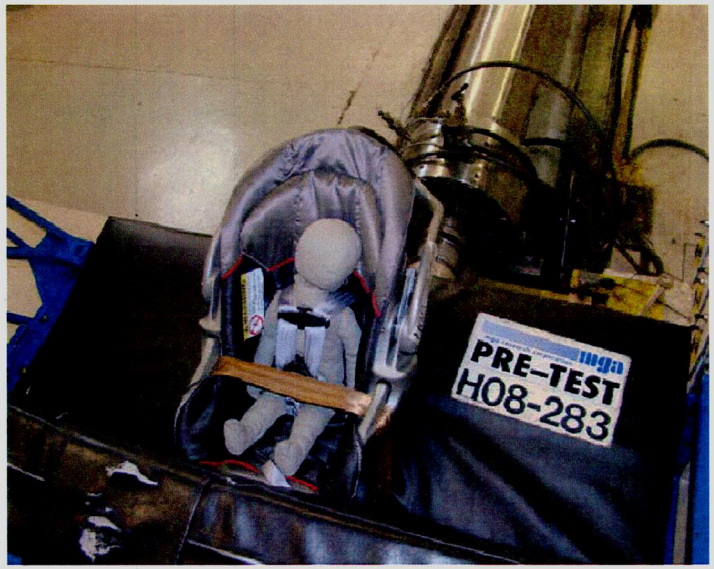
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

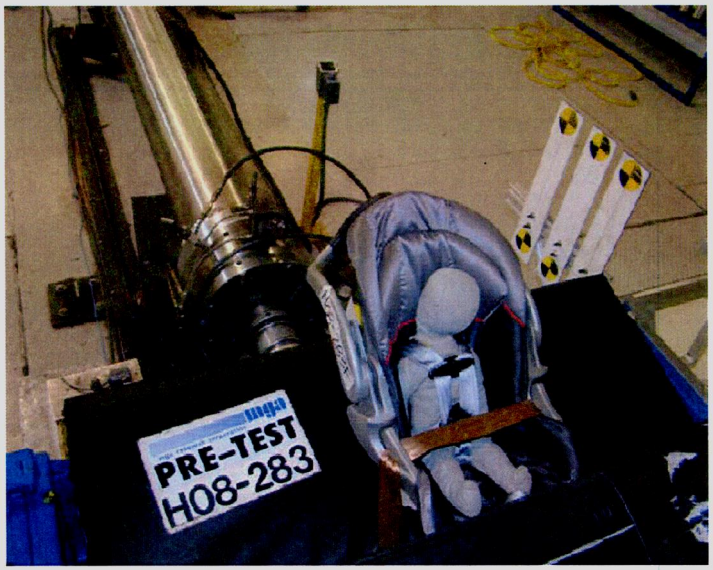
TEST DATE: 04/22/2008
TEST #: H08283



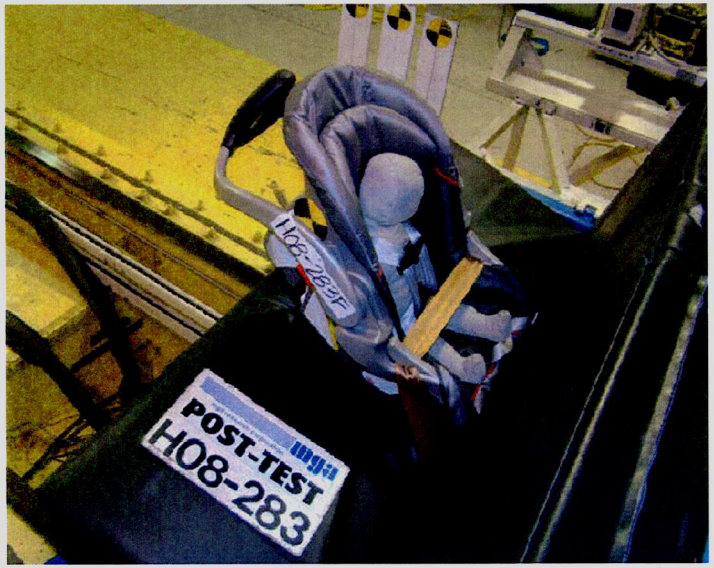


Sled Test: H08283F Pre-Test





Sled Test: H08283F Post-Test



TEST DATA NO. 4

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08283R
Test Date:	4/22/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 R (CRABI 12 mo)
Serial Number:	042
Temperature (Deg. F):	70
Relative Humidity (%):	47
Child Restraint System	
Model Number and Description:	64XX Latch-Loc
Installation Mode:	Rear-Facing with lap belt, carrier only
Adjustment Mode:	Reclined, Pre-test angle 35°
Shoulder Belt Location:	Top
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.7
Actual Velocity (mph):	29.3

Injury Criteria (FMVSS 213, S5.1.2)		
Test	Compliance Requirement	Test Result
Head Injury Criterion	≤ 1000	218
Chest Injury Criterion	Cumulative Duration Over 60 g ≤ 3 ms	3 msec clip = 35.9 Duration exceeded 60 g = 0.0

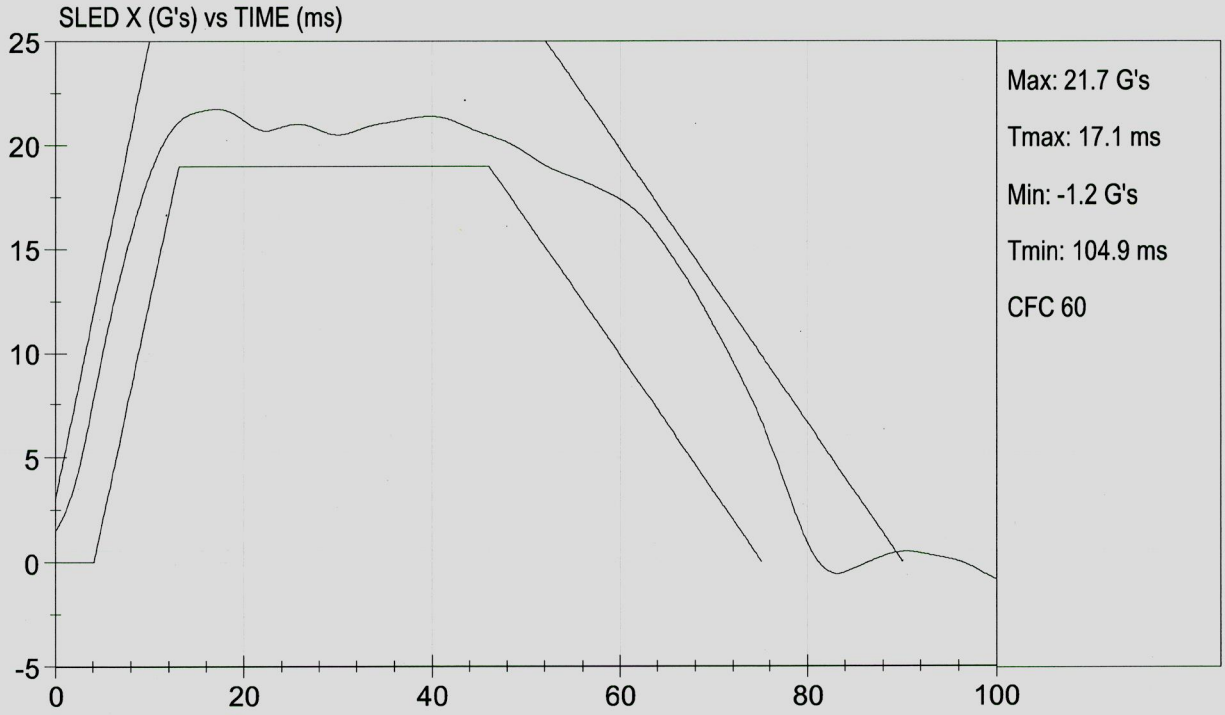
Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	12.1 lbs R 12.1 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	11.8 lbs R 11.8 lbs L

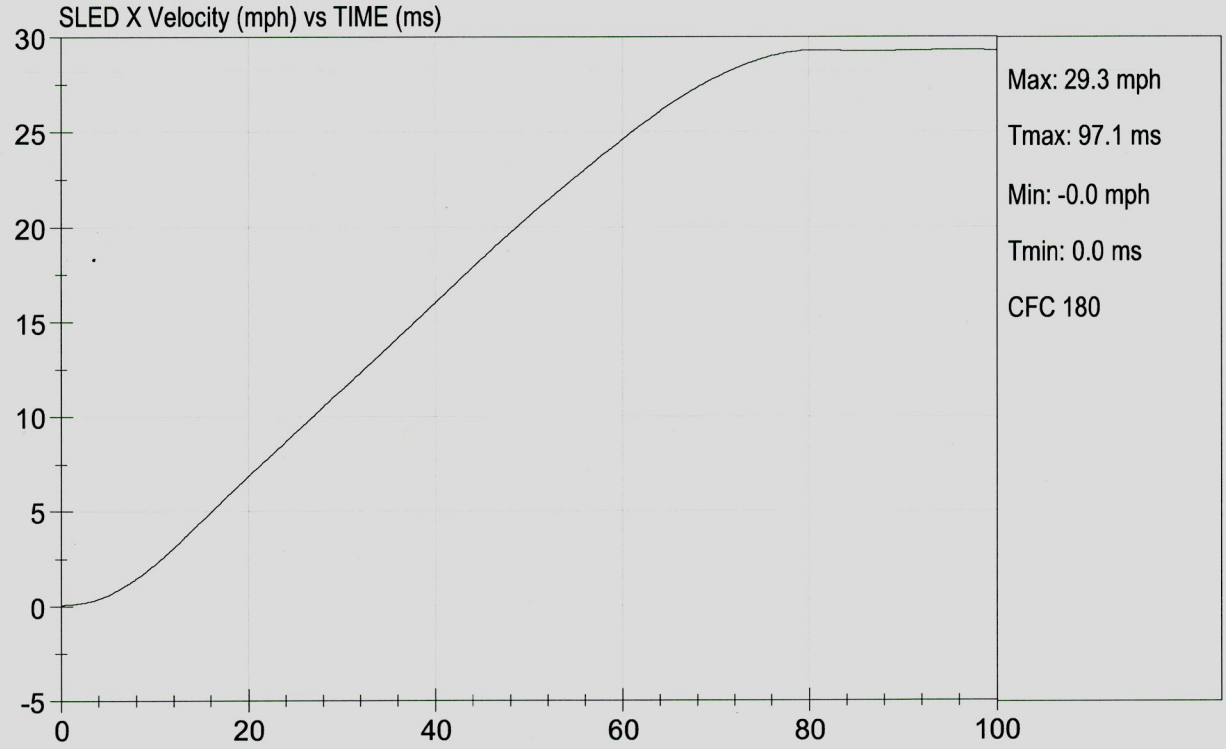
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	50°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

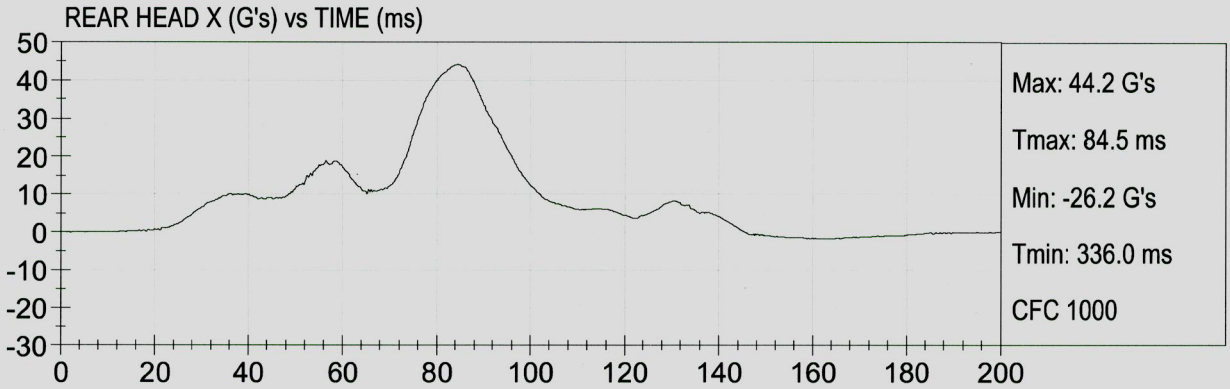
TEST DATE: 04/22/2008
TEST #: H08283

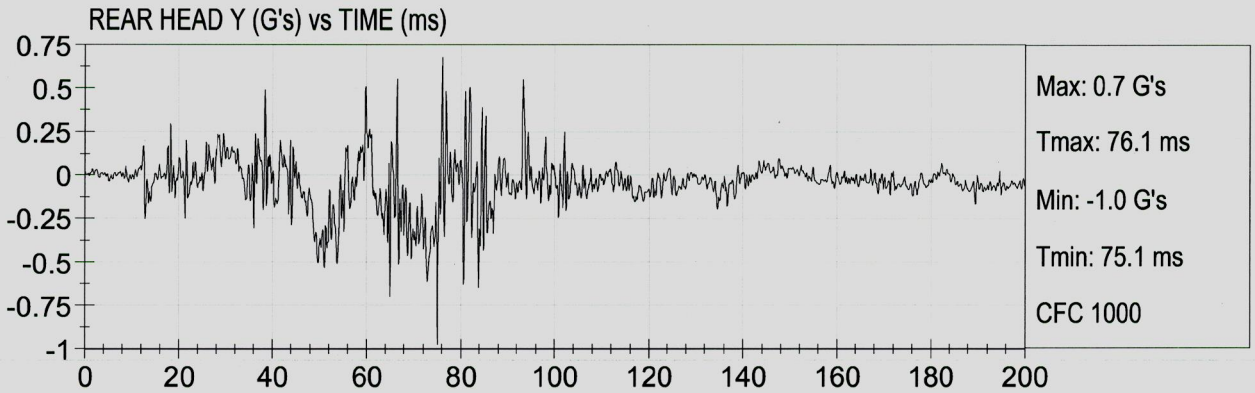


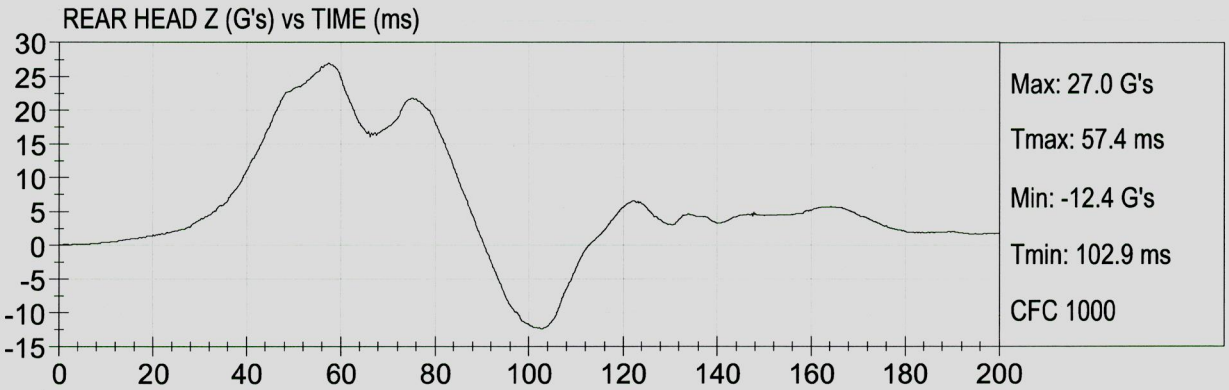


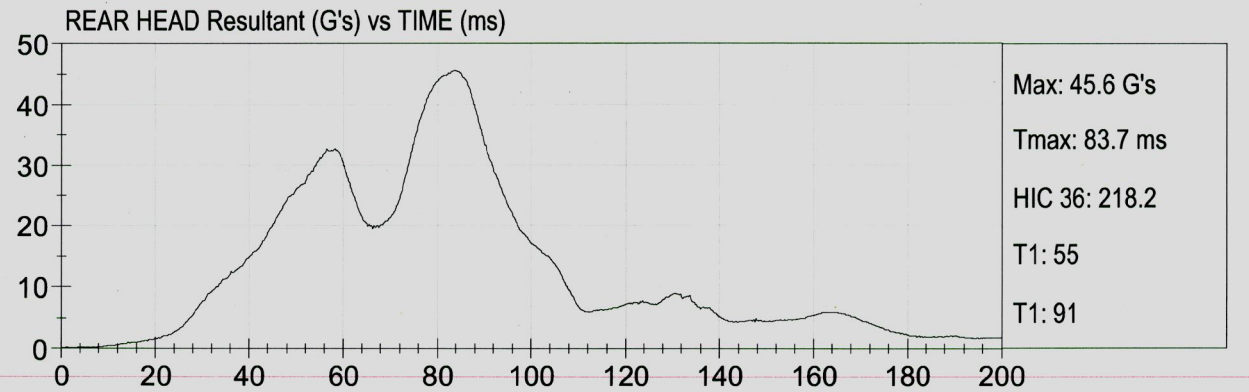
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

TEST DATE: 04/22/2008
TEST #: H08283



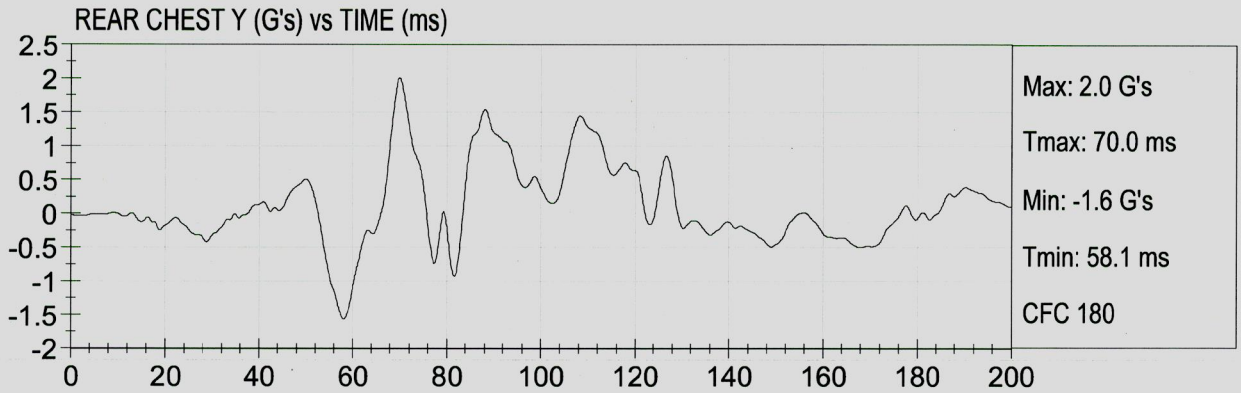


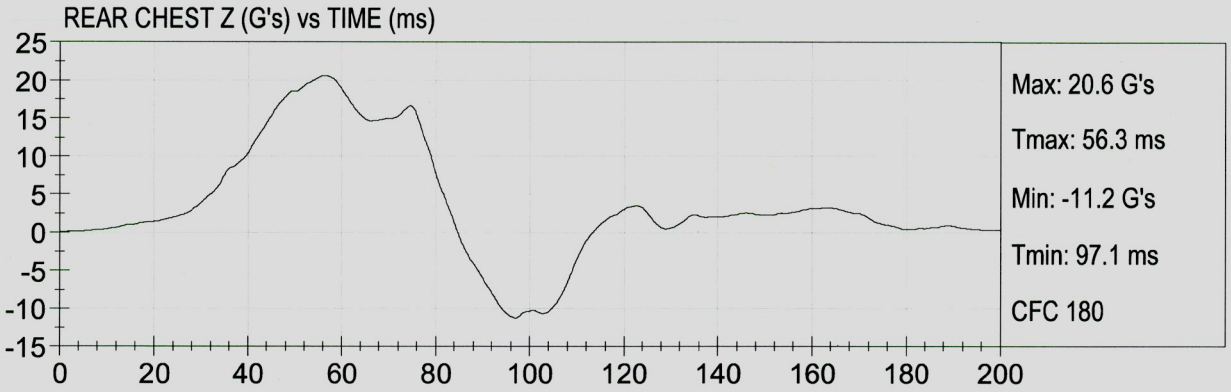


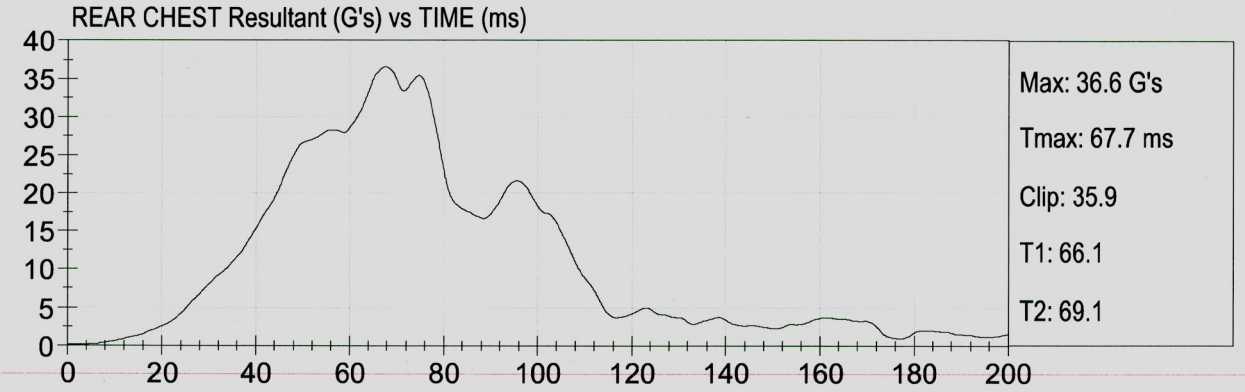


FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

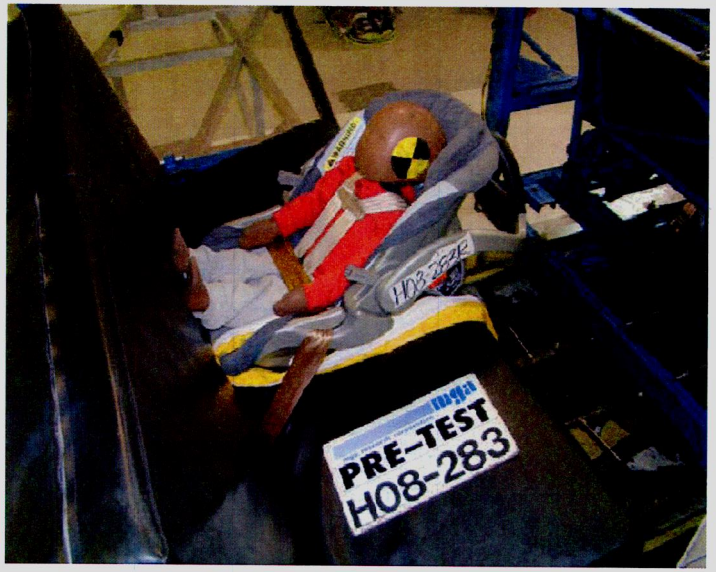
TEST DATE: 04/22/2008
TEST #: H08283



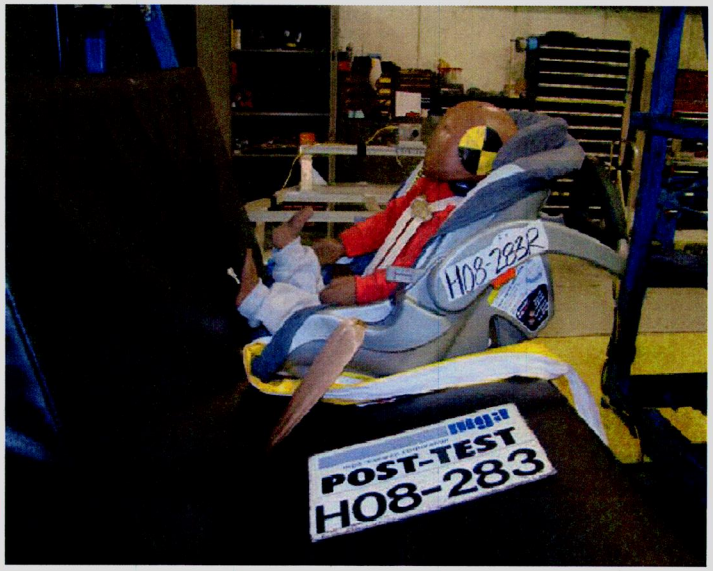




Sled Test: H08283R Pre-Test



Sled Test: H08283R Post-Test



TEST DATA NO. 5

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08286F
Test Date:	4/22/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 K (Newborn)
Serial Number:	004
Temperature (Deg. F):	72
Relative Humidity (%):	42
Child Restraint System	
Model Number and Description:	64XX Latch-Loc
Installation Mode:	Rear-Facing with LATCH
Adjustment Mode:	Reclined, Pre-test angle 33°
Shoulder Belt Location:	Bottom
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.8
Actual Velocity (mph):	29.6

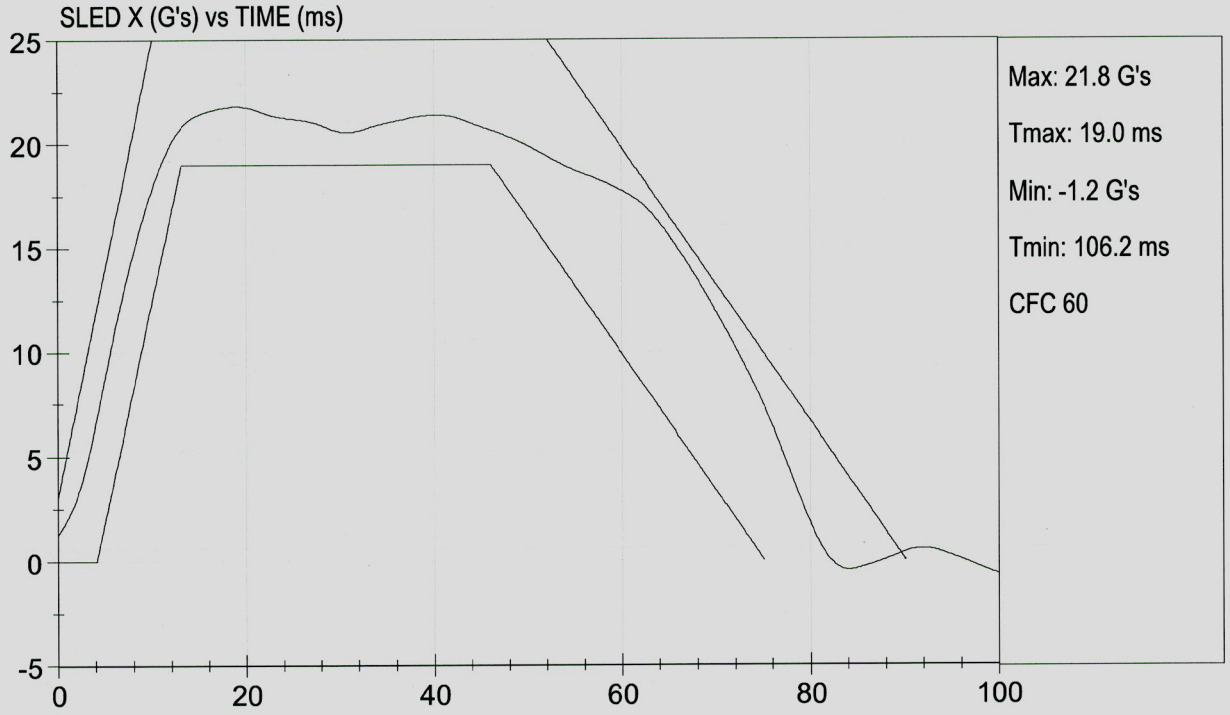
Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	11.9 lbs R 11.9 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	12.2 lbs R 12.2 lbs L

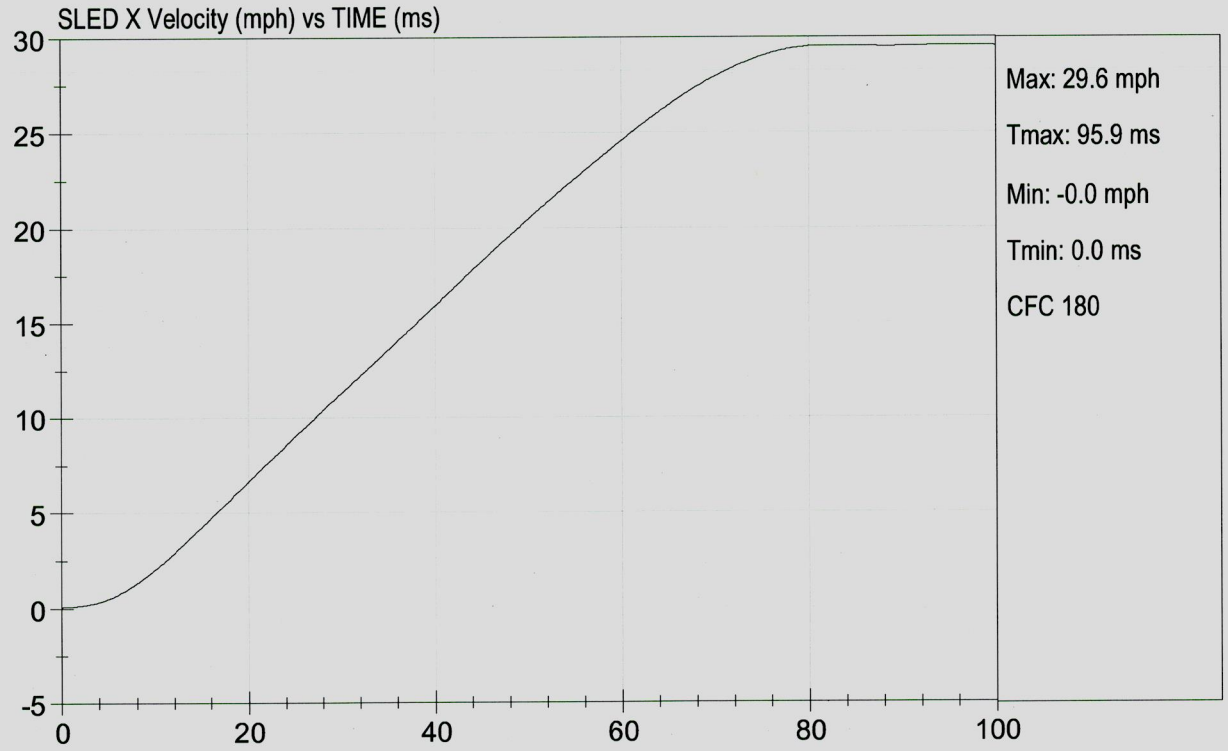
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	60°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

TEST DATE: 04/22/2008
TEST #: H08286





Sled Test: H08286F Pre-Test

Sled Test: H08286F Post-Test

TEST DATA NO. 6

Dynamic Impact Test Conditions (FMVSS 213, S6.1)	
Sled Test No.:	H08302R
Test Date:	4/23/2008
Nominal Velocity (mph):	30.0 (-2, +0)
Test Bench Used:	August 2005
Type of Dummy Used:	Part 572 R (CRABI 12 mo)
Serial Number:	042
Temperature (Deg. F):	72
Relative Humidity (%):	26
Child Restraint System	
Model Number and Description:	64XX Latch-Loc (1)
Installation Mode:	Rear-Facing with LATCH
Adjustment Mode:	Reclined, Pre-test angle 35°
Shoulder Belt Location:	Top
Crotch Belt/Shield Location:	N/A
Pulse Results	
Actual Peak Acceleration (g):	21.7
Actual Velocity (mph):	29.3

Injury Criteria (FMVSS 213, S5.1.2)		
Test	Compliance Requirement	Test Result
Head Injury Criterion	≤ 1000	571
Chest Injury Criterion	Cumulative Duration Over 60 g ≤ 3 ms	3 msec clip = 56.0 Duration exceeded 60 g = 0.0

Buckle Release (FMVSS 213, S5.4.3.5, S6.2)		
Test	Requirement	Result
Pre Impact Release Force	Force Range: 40 to 62 N (9 to 14 lbs)	12.0 lbs R 12.0 lbs L
Buckle Integrity	No release	No release
Post Impact Release Force	Force Range ≤ 71 N (16 lbs)	13.2 lbs R 13.2 lbs L

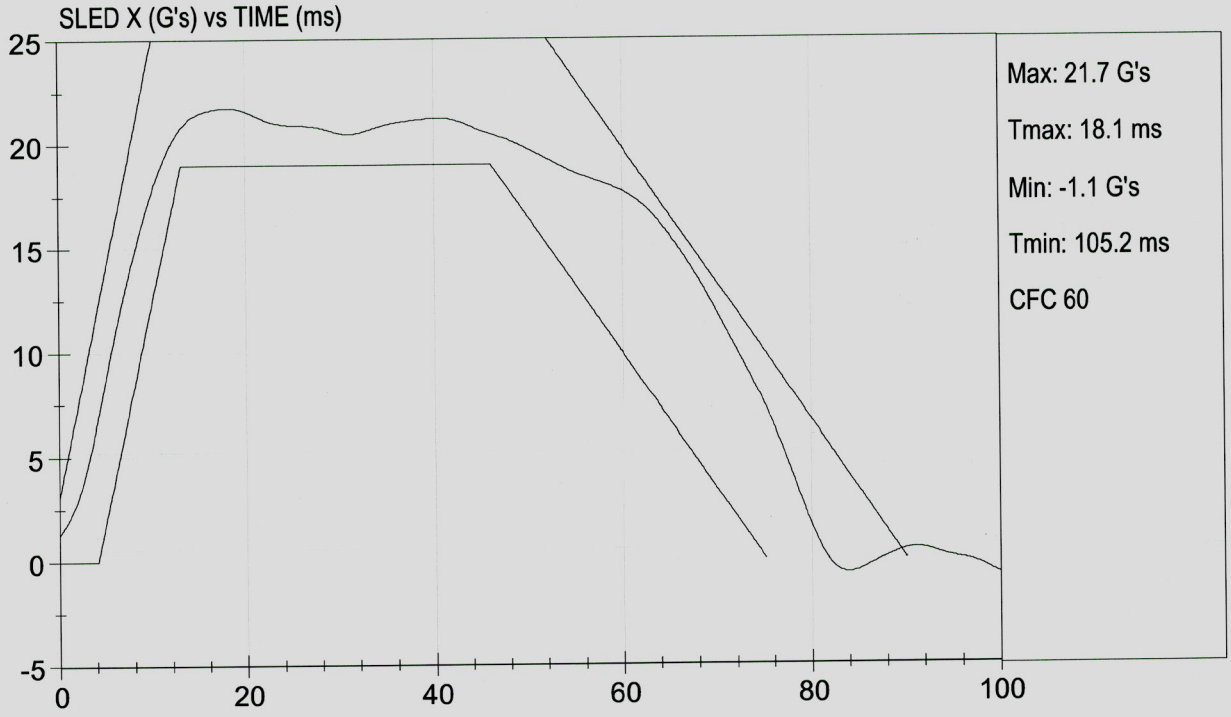
Restraint System Integrity (FMVSS 213, S5.1.1)		
Test	Compliance Requirement	Test Result
Structural Integrity	No complete separation	None
	No partial separation with exposed edge radius < 6.35 mm (1/4 in)	None
	No partial separation With protrusions > 9.53 mm (3/8 in)	None
Adjustment Position	No change	None
Back Surface/ Seating Surface Angle	Not < 45 degrees	N/A

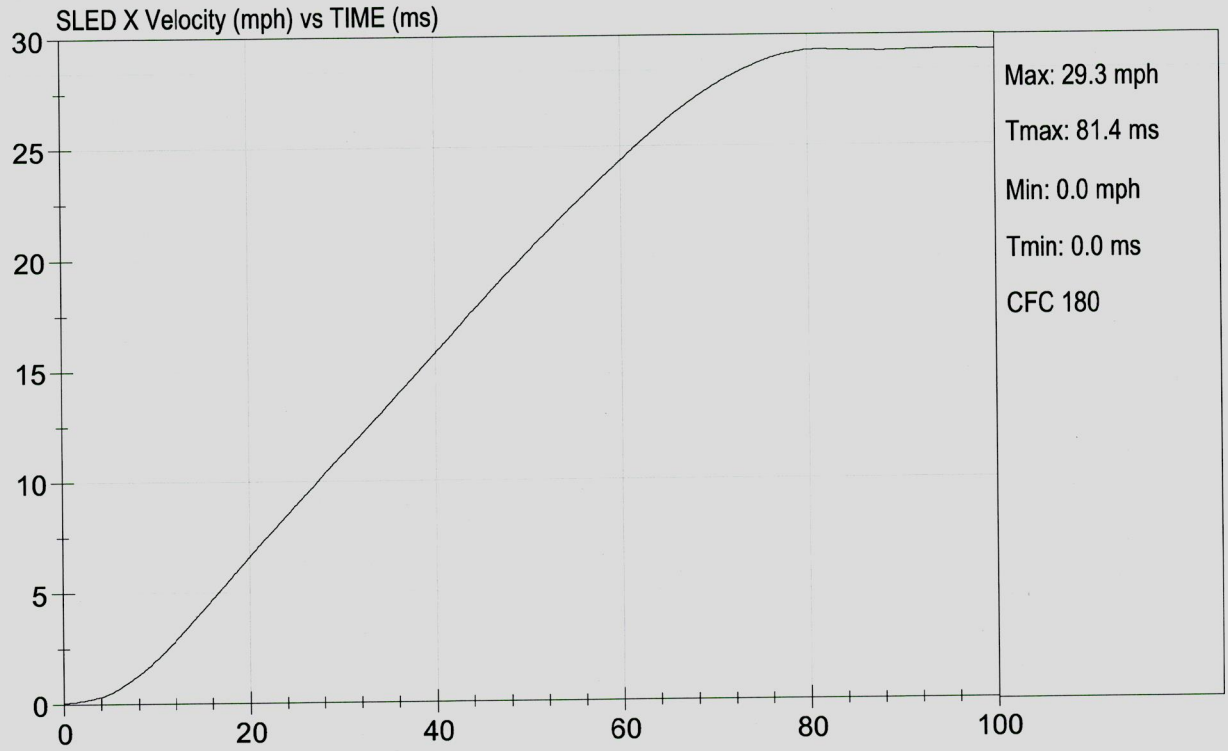
Occupant Excursion (FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))		
Test	Compliance Requirement	Test Result
Torso Retention (FMVSS 213, S5.1.3.2)	Retain within system	Retained
Head Excursion (FMVSS 213, S5.1.3.2)	Not beyond restraint's top and forward edge	Below
Back Support Angle (FMVSS 213, S5.1.4)	≤ 70 degrees	73°
Head – Torso Angle (FMVSS 213, S5.2.1.1(c))	Rearward change ≤ 45 degrees	<45°

Remarks:
(1) Tested with new M7 buckle.

FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

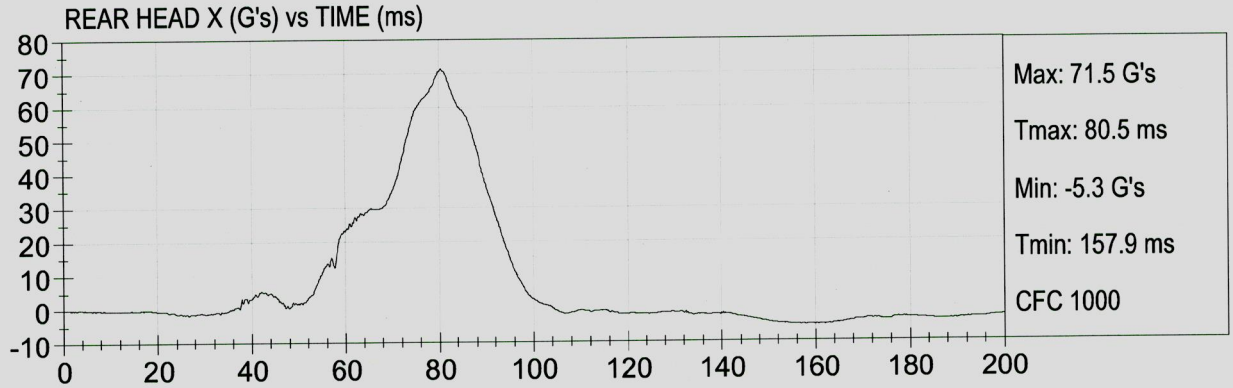
TEST DATE: 04/23/2008
TEST #: H08302

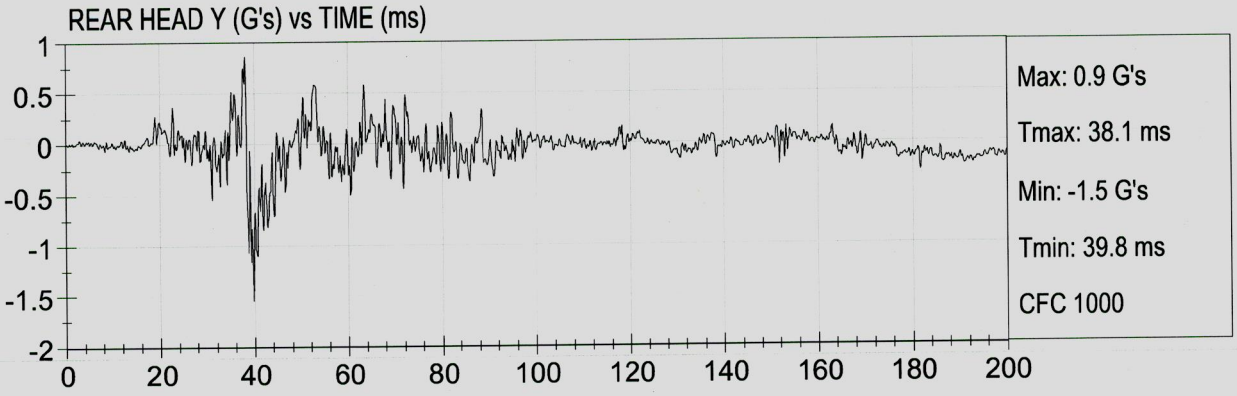


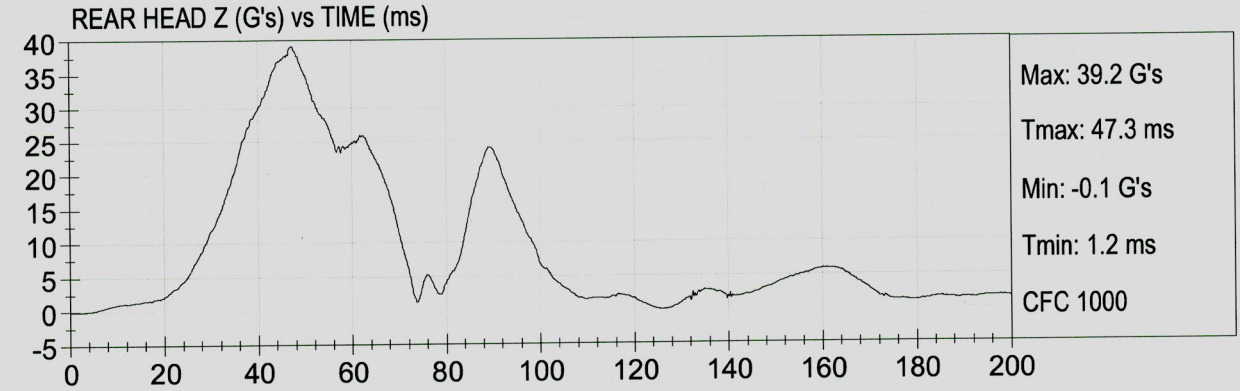


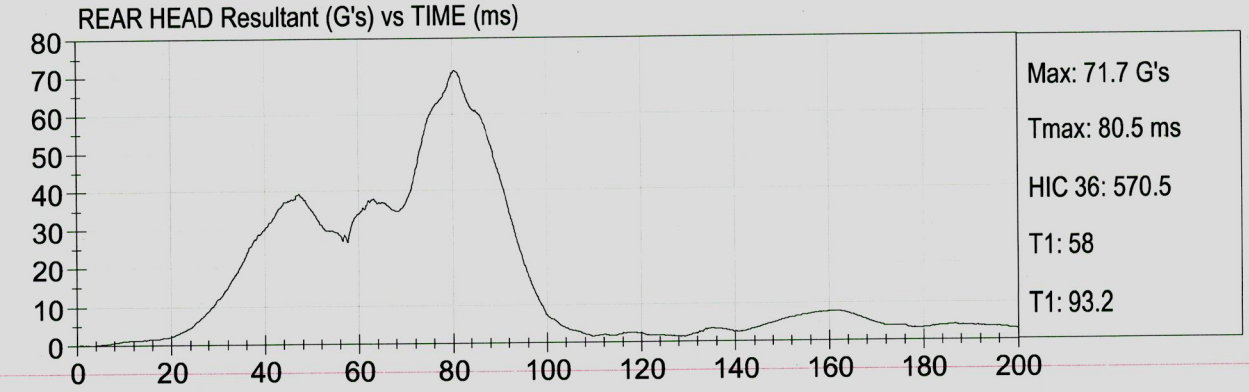
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

TEST DATE: 04/23/2008
TEST #: H08302



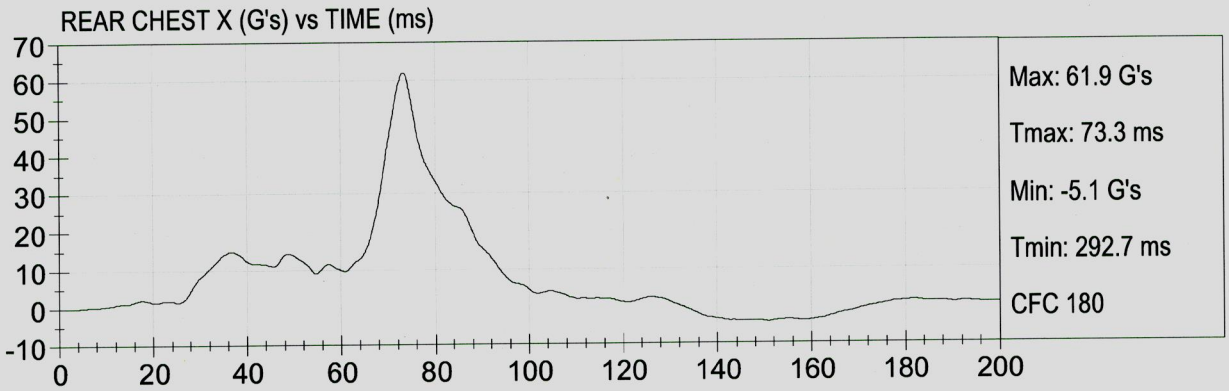


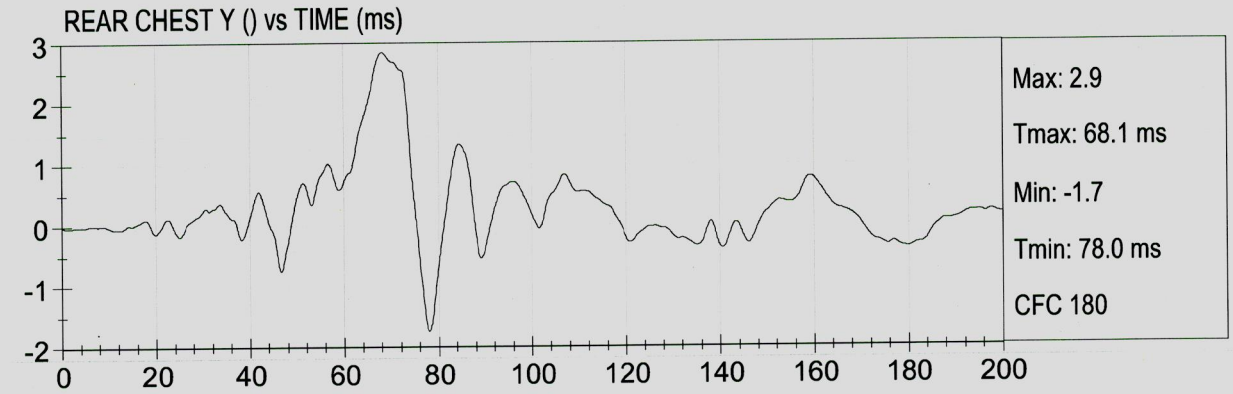


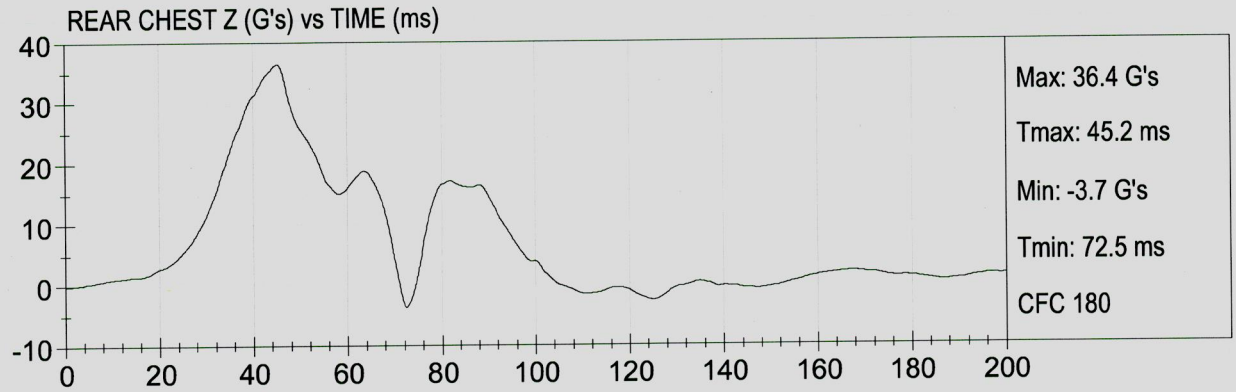


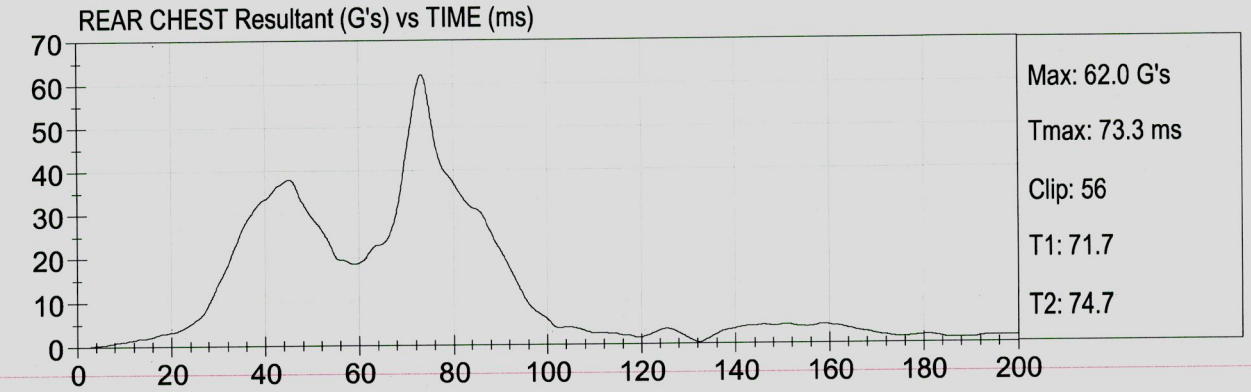
FMVSS 213 TEST
BABY TREND 64XX LATCH-LOC

TEST DATE: 04/23/2008
TEST #: H08302

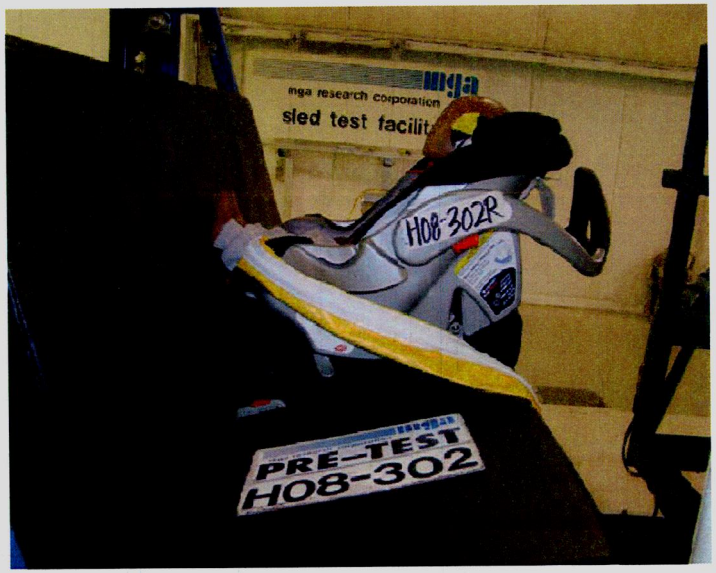




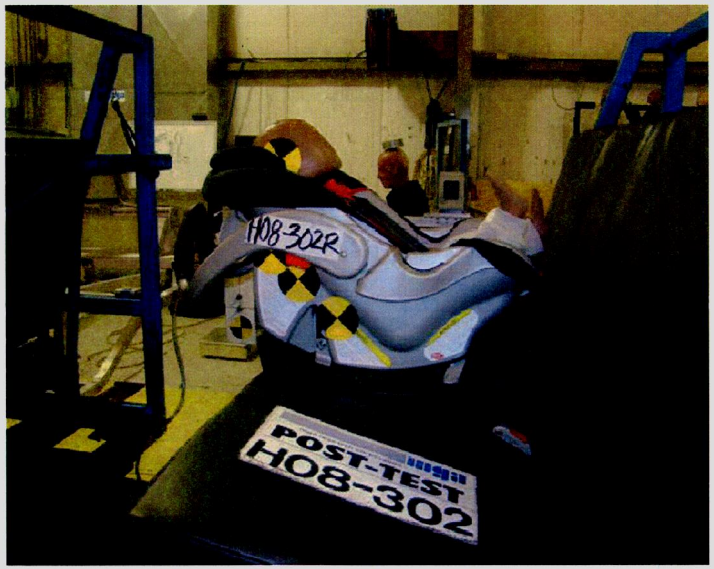




Sled Test: H08302R Pre-Test



Sled Test: H08302R Post-Test



BABY TREND, INC.

CHILD SEAT SAFETY CAMPAIGN

LATCH-LOC CAR SEAT BASE FOR BABY TREND 6400 SERIES INFANT CAR SEATS

MODEL 6400S Standalone Base
MODEL 6448 Silverado Infant Car Seat

MODEL 6481 Galaxy Infant Car Seat
MODEL 6439 Magnum Infant Car Seat

BABY TREND, INC. IS RECALLING THE CAR SEAT BASE USED WITH ITS MODEL #6400 SERIES CAR SEATS (6439-"MAGNUM"; 6481 "GALAXY"; 6448 "SILVERADO"; AND 6400S STAND ALONE BASE) DUE TO USE OF INCORRECT STEEL ON THE LATCH CONNECTOR LOCKING PAWL.

ALTHOUGH THE CAR SEAT BASE IS IN COMPLIANCE WITH FEDERAL MOTOR VEHICLE SAFETY STANDARDS, DURING BABY TREND'S RIGOROUS TESTING IT WAS DETERMINED THAT THE LATCH COMPONENT MAY FAIL IN THE EVENT OF A VEHICLE ACCIDENT IF THE CAR SEAT IS USED FOR CHILDREN OVER 22LBS, CONTRARY TO PRODUCT INSTRUCTIONS.

THIS RECALL APPLIES ONLY TO THOSE MODELS OF BABY TREND CAR SEAT LISTED ABOVE, MANUFACTURED SINCE APRIL 2007.

To arrange the return of your car seat base and to receive a replacement

PLEASE CALL: 1-800-328-7363
MONDAY THROUGH FRIDAY, 8:00AM to 4:30PM, PST
OR CONTACT US AT WWW.BABYTREND.COM

You can continue using the car seat without the base until the replacement base arrives, please see owners manual for instructions.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES: 1 | 1

2. AMENDMENT/MODIFICATION NO.: 0002

3. EFFECTIVE DATE: See Block 16C

4. REQUISITION/PURCHASE REQ. NO.: 08-05237

5. PROJECT NO. *(If applicable)*

6. ISSUED BY — CODE: NPO-320

Office Of Acquisition Management
DOT/NHTSA/NPO-320
1200 New Jersey Avenue, SE
Washington, DC 20590

7. ADMINISTERED BY *(If other than Item 6)* — CODE: BRYANT

Margaret Bryant 202-366-9887
DOT/NHTSA/NPO-320
Office of Acquisition Management
1200 New Jersey Avenue, SE
Washington DC 20590

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CHILDRENS HOSPITAL OF PHILADELPHIA
Attn: Sara Dubberly
34TH STREET & CIVIC CENTER BLVD
Joseph Stokes, Jr. Research Ins.
(215) 590-3800
PHILADELPHIA PA 19104-4318

CODE: 073757627 — FACILITY CODE:

(X) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

X 10A. MODIFICATION OF CONTRACT/ORDER NO.: DTNH22-07-P-00383

10B. DATED *(SEE ITEM 13)*: 07/09/2007

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER *(Specify type of modification and authority)* FAR 1.602.1

E. IMPORTANT: Contractor ☒ is not. ☐ is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 073757627
Title: Evaluation of the Effectiveness of Belt Positioning Booster Seats

The purpose of this modification is to extend the Period of Performance from July 15, 2007 through June 11, 2008 to July 15, 2007 through August 29, 2008.

Milestones and deliverables remain unchanged
Period of Performance: 07/15/2007 to 06/11/2008

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*

16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*: Earnest Jenkins

15B. CONTRACTOR/OFFEROR — *(Signature of person authorized to sign)*

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA — *(Signature of Contracting Officer)*

16C. DATE SIGNED: 6/13/08

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243